

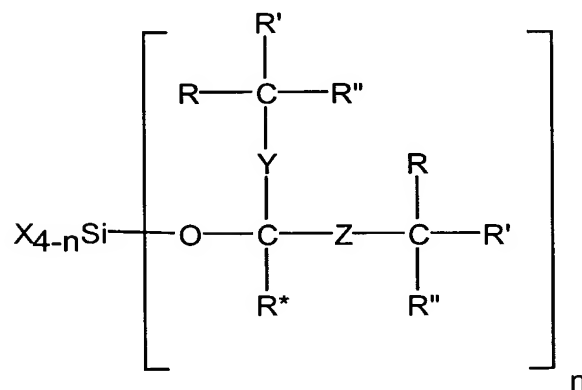
WHAT IS CLAIMED IS:

1. A modified silane compound consisting of a silane having 3 or 4 acetal moieties bonded thereto.

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2. A modified silane compound consisting of a silane having 2 acetal moieties bonded thereto with the proviso that the silane compound does not contain a methyl, ethyl, or phenyl group if the silane compound has the following structure:

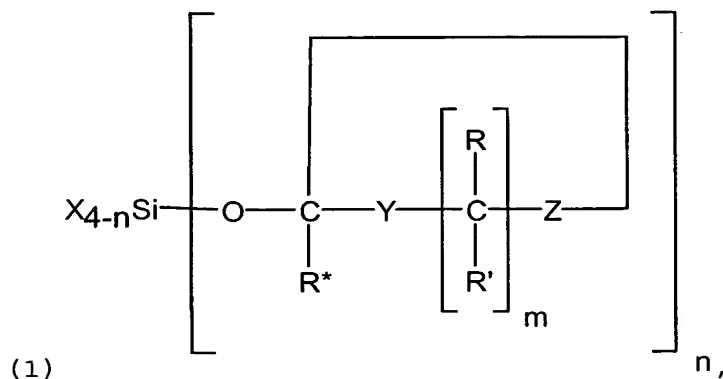
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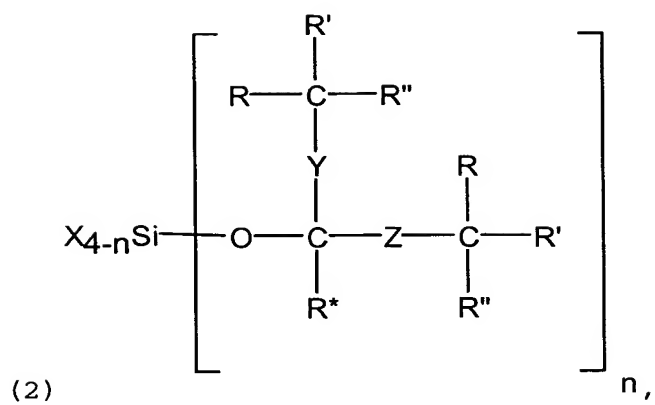


wherein n represents an integer.

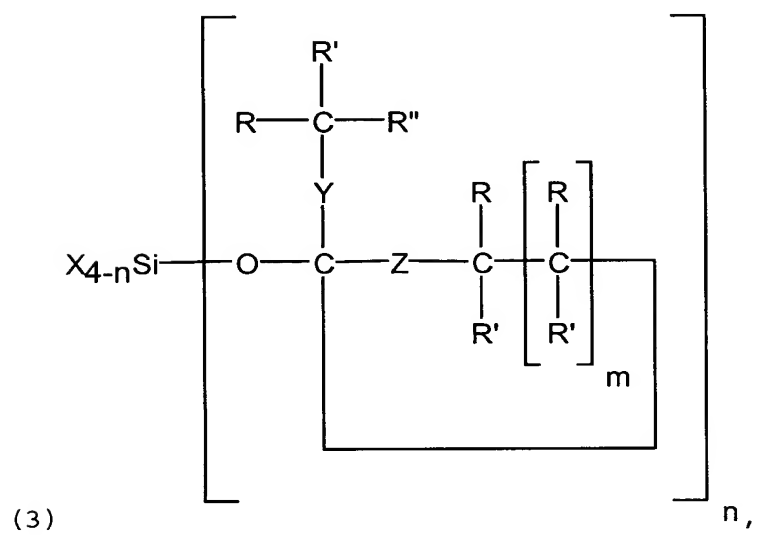
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3. A modified silane compound having a structural formula selected from the group consisting of:

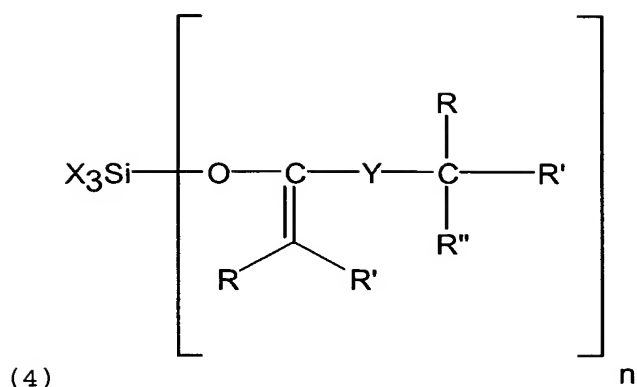




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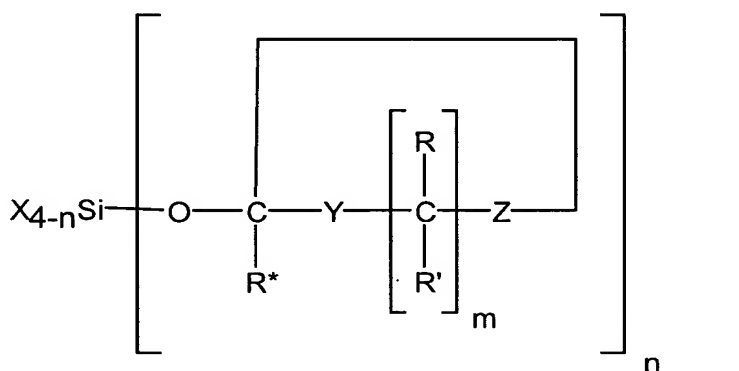
and



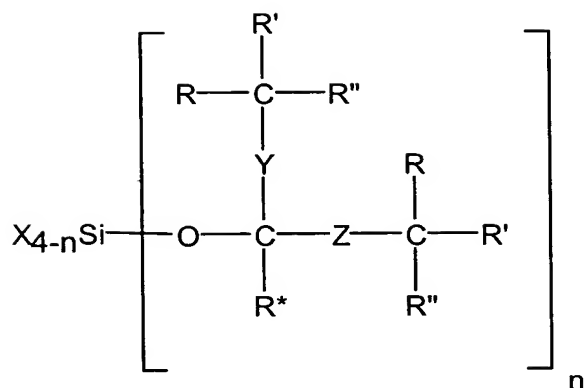
wherein n represents an integer from 2 to 4; wherein m represents an integer from 1 to about 20; with the proviso that m can represent the integer 0 for structures of formula (3) wherein Z represents the group C(R)R'; wherein X groups can be the same or different; wherein X represents a chemical moiety; with the proviso that X does not represent a methyl group, an ethyl group, or a phenyl group in cases where the modified silane compound is of structural formula (2) wherein n represents the integer 1 or the integer 2 wherein R* represents a hydrogen atom wherein Y represents an oxygen atom wherein Z represents the moiety C(R)R'; wherein R, R', and R'' can be the same or different and are selected from the group consisting of hydrogen atoms, alkyl groups containing from 1 to about 12 carbon atoms, aryl groups containing from about 6 to about 18 carbon atoms, alkaryl groups containing from 7 to about 18 carbon atoms, alkoxy groups containing from 1 to about 18 carbon atoms, hydroxy groups, and halide atoms; wherein R* is selected from the group consisting of hydrogen atoms, alkyl groups containing from 1 to about 12 carbon atoms, aryl groups containing from about 6 to about 18 carbon atoms, and alkaryl groups containing from 7 to about 18 carbon atoms; wherein R, R', R'', and R* can be bonded together in any combination in cases where R, R', R'', and

R* are not hydrogen atoms, halide atoms, or hydroxy groups; wherein Y represents a moiety selected from the group consisting of C(R)R', oxygen, sulfur, nitrogen, and phosphorus; wherein Z represents a moiety selected from the group consisting of C(R)R', oxygen, sulfur, nitrogen, and phosphorus; with the proviso that Y and Z can not both represent the moiety C(R)R'; wherein the contiguous cyclic ring in formulas (1) and (3) can contain heteroatoms selected from the group consisting of oxygen, sulfur, nitrogen, phosphorus, and silicon in cases where m represents an integer greater than 1; wherein the contiguous cyclic ring in formulas (1) and (3) can be saturated or unsaturated in cases where m represents an integer greater than 1; wherein said alkyl groups, aryl groups, alkaryl groups, and alkoxy groups can contain halide atoms and heteroatoms selected from the group consisting of oxygen, sulfur, nitrogen, phosphorus, and silicon.

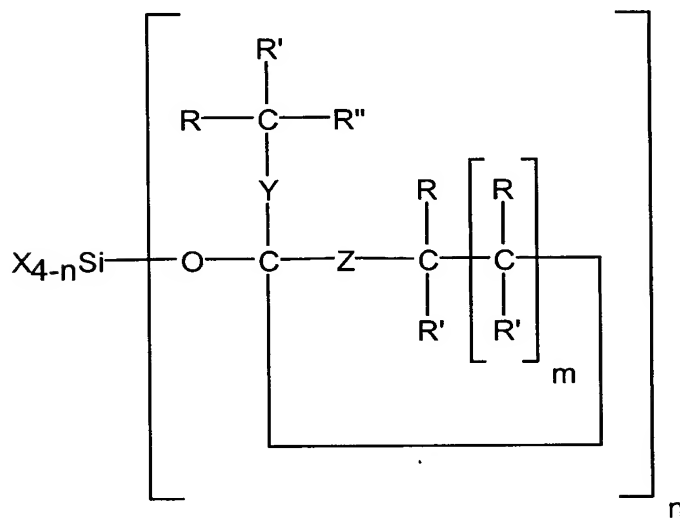
4. A modified silane compound as specified in claim 3 wherein the silane compound is of the structural formula:



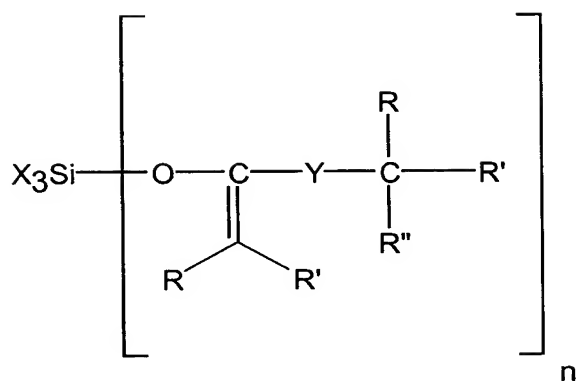
5. A modified silane compound as specified in claim 3 wherein the silane compound is of the structural formula:



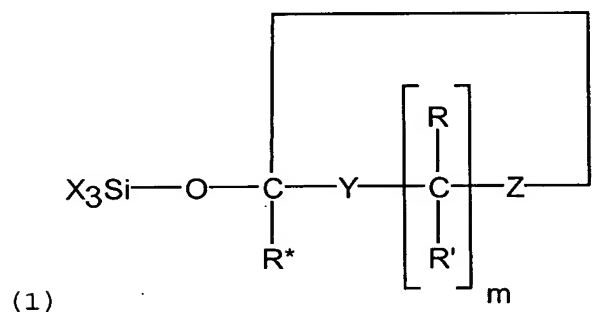
6. A modified silane compound as specified in claim
5 3 wherein the silane compound is of the structural formula:



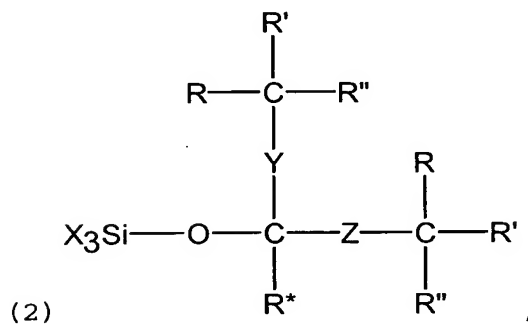
7. A modified silane compound as specified in claim
10 3 wherein the silane compound is of the structural formula:



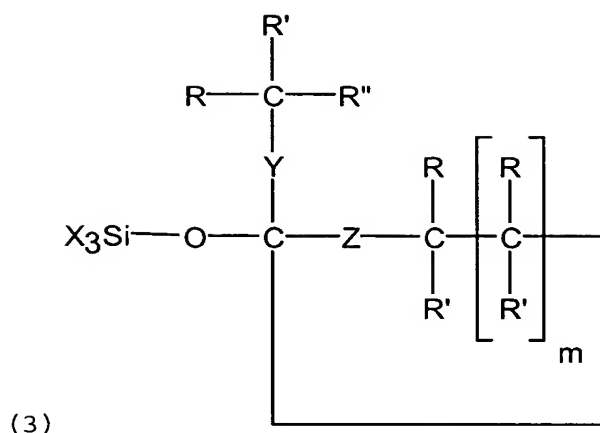
8. A modified silane compound as specified in claim
1 wherein said modified silane compound is of the
5 structural formula:



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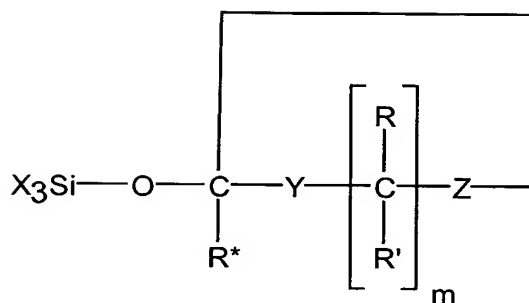
and



wherein m represents an integer from 1 to about 20; with
the proviso that m can represent the integer 0 for
5 structures of formula (3) wherein Z represents the group
C(R)R' wherein X represents a chemical moiety other than a
methyl group; wherein X groups can be the same or
different; wherein X represents a chemical moiety other
than a methyl, ethyl, butyl, or phenyl in cases where the
10 modified silane compound is of structural formula (1)
wherein Y represents an oxygen atom wherein Z represents
the moiety C(R)R' wherein m is equal to the integer 2 or
the integer 3; wherein X represents a chemical moiety other
than a methyl group, a tertiary butyl group, or a phenyl
15 group in cases where the modified silane compound is of
structural formula (3) wherein Y represents an oxygen atom
wherein Z represents the moiety C(R)R' wherein m is equal
to the integer 3; wherein R, R', and R'' can be the same or
different and are selected from the group consisting of
20 hydrogen atoms, alkyl groups containing from 1 to about 12
carbon atoms, aryl groups containing from about 6 to about
18 carbon atoms, alkaryl groups containing from 7 to about
18 carbon atoms, alkoxy groups containing from 1 to about
18 carbon atoms, hydroxy groups, and halide atoms; wherein
25 R* is selected from the group consisting of hydrogen atoms,

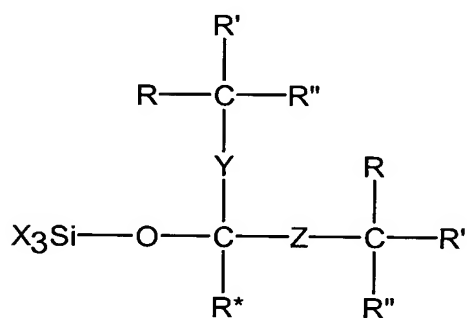
alkyl groups containing from 1 to about 12 carbon atoms,
aryl groups containing from about 6 to about 18 carbon
atoms, and alkaryl groups containing from 7 to about 18
carbon atoms; wherein R, R', R'', and R* can be bonded
5 together in any combination in cases where R, R', R'', and
R* are not hydrogen atoms, halide atoms, or hydroxy groups;
wherein Y represents a moiety selected from the group
consisting of C(R)R', oxygen, sulfur, nitrogen, and
phosphorus; wherein Z represents a moiety selected from the
10 group consisting of C(R)R', oxygen, sulfur, nitrogen, and
phosphorus; with the proviso that Y and Z can not both
represent the moiety C(R)R'; wherein the contiguous cyclic
ring in formulas (1) and (3) may contain heteroatoms
selected from the group consisting of oxygen, sulfur,
15 nitrogen, phosphorus, and silicon in cases where m
represents an integer greater than 1; wherein the
contiguous cyclic ring in formulas (1) and (3) may be
saturated or unsaturated in cases where m represents an
integer greater than 1; wherein said alkyl groups, aryl
20 groups, alkaryl groups, and alkoxy groups can contain
halide atoms and heteroatoms selected from the group
consisting of oxygen, sulfur, nitrogen, phosphorus, and
silicon.

25 9. A modified silane compound as specified in claim
8 wherein the silane compound is of the structural formula:



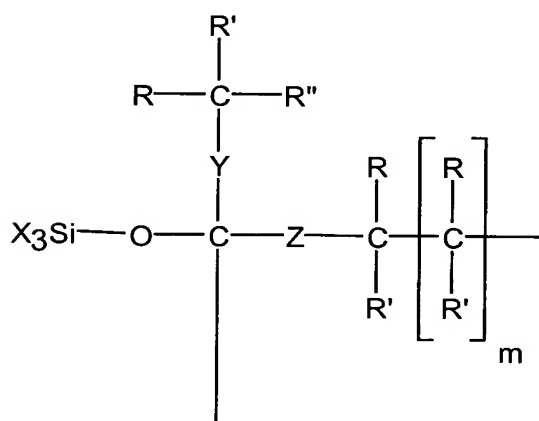
10. A modified silane compound as specified in claim 8 wherein the silane compound is of the structural formula:

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11. A modified silane compound as specified in claim 8 wherein the silane compound is of the structural formula:

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12. A modified silane compound as specified in claim

3 wherein at least one of the members selected from the
group consisting of R, R', and R'' is a hydroxyl groups.

5 13. A modified silane compound as specified in claim
4 wherein at least one of the members selected from the
group consisting of R, R', and R'' is a hydroxyl groups.

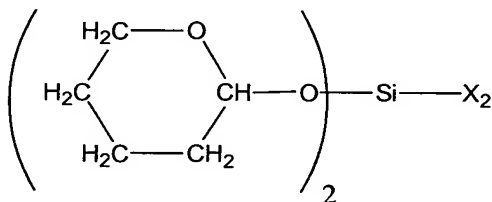
10 14. A modified silane compound as specified in claim
6 wherein at least one of the members selected from the
group consisting of R, R', and R'' is a hydroxyl groups.

15 15. A modified silane compound as specified in claim
8 wherein at least one of the members selected from the
group consisting of R, R', and R'' is a hydroxyl groups.

16. A modified silane compound as specified in claim
9 wherein at least one of the members selected from the
group consisting of R, R', and R'' is a hydroxyl groups.

20 17. A modified silane compound as specified in claim
11 wherein at least one of the members selected from the
group consisting of R, R', and R'' is a hydroxyl groups.

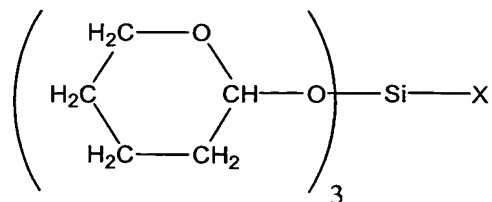
25 18. A modified silane compound as specified in claim
3 wherein said modified silane compound is of the
structural formula:



30 wherein X represents a chemical moiety.

19. A modified silane compound as specified in claim 3 wherein said modified silane compound is of the structural formula:

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wherein X represents a chemical moiety.

10 20. A modified silane compound as specified in claim 1 wherein said modified silane compound is of the structural formula:

